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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,626	10/24/2003	Carl W. Gerst III	C03-006	1510

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INTELLECTUAL PROPERTY DEPARTMENT
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EXAMINER	
TRAIL, ALLYSON NEEL	
ART UNIT	**PAPER NUMBER**
2876	

MAIL DATE	DELIVERY MODE
07/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,626	GERST ET AL.	
	Examiner	Art Unit	
	Allyson N. Trail	2876	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2007 and 01 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11-22* is/are allowed.

6)☒ Claim(s) *1, 3-10, and 23-35* is/are rejected.

7)☒ Claim(s) *2* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment

1. Receipt is acknowledged of the Amendment filed February 5, 2007 and the Request for Continued Examination filed May 1, 2007.

Remarks

2. A clerical error was noticed in the claims and the applicant's arguments filed February 5, 2007. The application is referred to as "10/693,636" however should instead be referred to as --10/693,626--. In order to avoid any further confusion, please make the appropriate changes.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, 5-8, 23, 24, 26-28, 30-33, and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukumoto et al (6,621,065), hereinafter Fukumoto.

With respect to claims 1 and 23, Fukumoto discloses an illuminator 31 (figure 2) for illuminating a subject (referred to by Fukumoto as "the work") that is imaged by an image sensor (CCD) 27.

Figures 5B and 8A illustrate a ring light source 72. Figure 5B shows the light source 72 being arranged around a perimeter of a predetermined shape. As is shown in figure 2, the ring light source 72 communicates with a light pipe 13, which defines a hollow tube having a cross-section with the predetermined shape. As can be seen in figure 2, the light pipe defines an inner lumen through which the sensor 27 views the subject. (see column 4, line 66 – column 5, line 18). Fukumoto discloses in the abstract as well as in column 1, lines 49-50, that the imaging probe 1 and be employed at any angle so that a sample can be imaged at any given angle. Therefore, the tip of the light pipe 13 can be adapted to project either high-angle bright field illumination pattern or low-angle dark field illumination pattern with respect to the subject.

Fukumoto discloses in column 6, lines 15-24 that an illumination control unit 91 determines and controls to turn on/off either one or both of the down-projection and ring illumination sources 31 and 13 and also determines and controls to turn on/off and dim the LEDs 62 and 72 contained in the illumination light sources all at once or separately or on a block-by-block basis.

With respect to claims 3, 6, and 24, Fukumoto discloses in figure 5B that the predetermined shape defines a circle.

With respect to claims 5 and 26, clearly the light pipe 13 reduces a field of view of the image sensor. Without the light pipe 13, the illumination provided by the ring of light 72 would not be contained.

With respect to claims 7 and 27, Fukumoto's light pipe conforms to the shape of the subject. The pipe is used to illuminate the subject. Therefore it is clear that the shape of the pipe would be similar to the shape of the subject.

With respect to claims 8, 28, and 33, figures 1A and 1B illustrate the imaging probe with the light pipe mounted thereto. The imaging probe is shown to be handheld.

With respect to claim 30 see Fukumoto teachings above with regards to claim 1. Additionally Fukumoto discloses the illumination pattern (determined by the light pipe) covering a reduced area with respect to the field of view. The reduced field of view created by the illumination pattern highlights an aiming location.

With respect to claims 31 and 32, as is discussed above with regards to claim 23, Fukumoto discloses in the abstract as well as in column 1, lines 49-50, that the imaging probe 1 and be employed at any angle so that a sample can be imaged at any given angle. Therefore, the tip of the light pipe 13 can be adapted to project either high-angle bright field illumination pattern or low-angle dark field illumination pattern with respect to the subject.

With respect to claim 35, the bright field illuminator 72 is shown in figure 5B to be in the shape of a ring. The figure additionally shows that the ring is coaxial with the light pipe 13.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 4 and 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto in view of Hattersley et al (2002/0000472), hereinafter Hattersley.

Fukumoto's teachings are discussed above. Fukumoto however fails to specifically teach the light pipe being in the shape of a rectangle.

With respect to claims 4 and 25, Hattersley discloses in figure 4 an illuminator 20 for illuminating a subject that is imaged by an image sensor. The illuminator includes at least one light pipe 30 (shown in figure 5). Figure 4 illustrates the light pipe being in the shape of a rounded edged rectangle. The first ring light source 28 communicates with a first light pipe defining a hollow tube (see paragraph 0031), which has a cross-section with the pre-determined shape, i.e., rectangular.

In view of Hattersley's teachings it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the rectangular light pipe taught by Hattersley in combination with the image capturing device taught by Fukumoto. As is taught by Hattersley, one would be motivated use various light pipe shapes such as rectangular in order to clearly illuminate different shaped subjects such as integrated circuit shown in figure 1.

7. Claims 9, 10, 29, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukumoto in view of Patel et al(2003/0080189), hereinafter Patel.

Fukumoto's teachings are discussed above. With respect to claim 34, see Fukumoto's teachings regarding claims 23. Fukumoto however fails to specifically

teach a beam (external bright field illuminator) to assist in aiming the image sensor at the subject.

With respect to claims 9, 10, 29, and 34, Patel teaches in paragraph 0011, providing illumination and to assist in aiming of an imaging system. Patel teaches employing either lasers or light emitting diodes (LEDs) for assistance in aiming the image sensor.

In view of Patel's teachings it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an aiming aid as is taught by Patel in combination with the image capturing device taught by Fukumoto. One would be motivated include assistance in aiming in order to clearly depict the object that is to be scanned before the scanning or imaging occurs. An aiming system will help with accuracy.

Allowable Subject Matter

8. Claims 11-22 are allowable over prior art. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

The following is an examiner's for allowance: Although Fukumoto teaches an illuminator for illuminating a subject that is imaged by an image sensor, which a ring source arranged around a perimeter of a predetermined shape as well as a light pipe, the above identified prior art of record, taken alone, or in combination with any other prior art, fails to teach or fairly suggest the specific limitations of claims 2, 11-22 and 35

of the present claimed invention. In particular, prior art does not teach the claimed illuminator including a second ring light source which communicates with a second light pipe, wherein the first light pipe is coaxial with the second light pipe. The above limitations are not disclosed in prior art and moreover, one of ordinary skill in the art would not have been motivated to come to the claimed invention.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Allyson N. Trail* whose telephone number is (571) 272-2406. The examiner can normally be reached between the hours of 7:30AM to 4:00PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee, can be reached on (571) 272-2398. The fax phone number for this Group is (571) 273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to **[allyson.trail@uspto.gov]**.

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published

in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Allyson N. Trail
Patent Examiner
Art Unit 2876
July 9, 2007

Jared J. Fureman
JARED J. FUREMAN
PRIMARY EXAMINER